

LISTING OF CLAIMS

The listing of claims provided below replaces all prior versions, and listings, of claims in the application.

- 5 1. (Previously Presented) A method comprising:
- obtaining image data on a server, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;
- clipping said image data on said server to obtain clipped image data, the clipped image data representing a portion of the complete image when rendered in the display;
- 10 transmitting said clipped image data from a transmitter on said server via a computer network without conversion to a receiver on a client;
- said receiver scaling said clipped image data for display;
- obtaining by said server a clip-list specifying at least one clipping region, the at least one clipping region defining a portion of the complete image having the horizontal
- 15 extent and the vertical extent; and
- mapping by said server of said at least one clipping region to said image data to determine said clipped image data, wherein the mapping includes determining a nearest pixel in said image data to a location in said at least one clipping region.

- 20 2-3. (Cancelled)

4. (Previously Presented) The method of Claim 1, wherein determining a nearest pixel is based on a Euclidean distance.

5. (Previously Presented) The method of Claim 1, wherein said clipping region comprises a rectangle and said location comprises a corner of said rectangle.

6. (Previously Presented) The method of Claim 1, wherein said clipped
5 image data are further compressed, wherein said clipped and compressed image data comprises one or more subsampled chroma components and one or more differentiated and quantized luma components, and wherein determining said nearest pixel further comprises:

determining a plurality of pixels that comprise samples from said one or more
10 subsampled chroma components and values from said one or more differentiated and quantized luma components; and

determining said nearest pixel from said plurality of pixels.

7. (Previously Presented) The method of Claim 1, wherein said at least one
15 clipping region comprises a plurality of clipping regions, and wherein mapping comprises mapping said plurality of clipping regions to a plurality of regions of image data.

8. (Previously Presented) The method of Claim 7, wherein transmitting
comprises individually transmitting said plurality of clipping regions of image data.

20

9. (Previously Presented) The method of Claim 7, wherein scaling comprises independently scaling up said plurality of regions of image data by said client to fill respective regions of a display.

10. (Previously Presented) The method of Claim 9, wherein said independently scaling said plurality of regions of image data comprises applying independent scale factors that reduce scaling along a horizontal axis and increase scaling along a vertical axis.

5

11. (Currently Amended) A computer readable medium including program instructions ~~program product comprising:~~

~~a computer usable medium having computer readable code embodied therein for processing image data, said computer program product comprising:~~

10 ~~program instructions for directing computer readable code configured to cause a server to obtain image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;~~

~~program instructions for directing computer readable code configured to cause said server to clip said image data to obtain clipped image data, the clipped image data~~
15 ~~representing a portion of the complete image when rendered in the display;~~

~~program instructions for directing computer readable code configured to cause said server to transmit said clipped image data via a computer network without conversion to a receiver on a client;~~

~~program instructions for directing computer readable code configured to cause~~
20 ~~said receiver to scale said clipped image data for display,~~

wherein said program instructions for directing computer readable code
~~configured to cause~~ said server to clip said image data includes program instructions for
directing computer readable code configured to cause said server to obtain a cliplist
specifying at least one clipping region, the at least one clipping region defining a portion
25 of the complete image having the horizontal extent and the vertical extent, and program

instructions for directing computer-readable code configured to cause said server to map said at least one clipping region to said image data to determine said clipped image data and to cause said server to determine a nearest pixel in said image data to a location in said at least one clipping region.

5

12-13. (Cancelled)

14. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 11, wherein said program instructions for directing computer-readable code
10 ~~configured to cause~~ said server to determine a nearest pixel determines a Euclidean distance.

15. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 11, wherein said clipping region comprises a rectangle and said location comprises
15 a corner of said rectangle.

16. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 11, wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises one or more subsampled chroma components and
20 one or more differentiated and quantized luma components, and wherein said program instructions for directing computer-readable code configured to cause said server to determine said nearest pixel further comprises:

program instructions for directing computer-readable code configured to cause said server to determine a plurality of pixels that comprise samples from said one or more

subsampled chroma components and values from said one or more differentiated and quantized luma components; and

program instructions for directing ~~computer readable code configured to cause~~ said server to determine said nearest pixel from said plurality of pixels.

5

17. (Currently Amended) The computer readable medium ~~program product~~ of Claim 11, wherein said at least one clipping region comprises a plurality of clipping regions, and wherein said program instructions for directing ~~computer readable code configured to cause~~ said server to map comprises program instructions for directing
10 ~~computer readable code configured to cause~~ said server to map said plurality of clipping regions to a plurality of regions of image data.

18. (Currently Amended) The computer readable medium ~~program product~~ of Claim 17, wherein said program instructions for directing ~~computer readable code configured to cause~~ said server to transmit comprises program instructions for directing
15 ~~computer readable code configured to cause~~ said server to individually transmit said plurality of regions of image data.

19. (Currently Amended) The computer readable medium ~~program product~~ of Claim 17, wherein said program instructions for directing ~~computer readable code configured to cause~~ said receiver to scale comprises program instructions for directing
20 ~~computer readable code configured to cause~~ said receiver to independently scale up said plurality of regions of image data to fill respective regions of a display.

20. (Currently Amended) The computer readable medium ~~program product~~ of Claim 19, wherein said program instructions for directing computer-readable code ~~configured to cause~~ said receiver to independently scale said plurality of regions of image data comprises program instructions for directing computer-readable code ~~configured to~~
5 ~~cause~~ said receiver to apply independent scale factors that reduce scaling along a horizontal axis and increase scaling along a vertical axis.

21. (Currently Amended) An apparatus comprising:
a network;
10 a thin client;
a server configured to obtain image data and perform a mapping of at least one clipping region to said image data to obtain clipped image data, the server configured to perform the mapping by determining a nearest pixel in said image data to a location in said at least one clipping region, said server further configured to ~~and~~ transmit said
15 clipped image data over said network; and
a receiver on said thin client configured to receive said clipped image data without conversion over said network, said receiver further configured to scale said clipped image data for display.

20 22. (Currently Amended) The apparatus of Claim 21, ~~further comprising a clip-list comprising~~ wherein said at least one clipping region is defined within a clip-list accessible to said server, wherein said server is configured to map said at least one clipping region to said image data to obtain said clipped image data.

25 23. (Cancelled)

24. (Currently Amended) The apparatus of Claim 21 [~~23~~], wherein said server is configured to determine said nearest pixel based upon a Euclidean distance.

5 25. (Currently Amended) The apparatus of Claim 21 [~~23~~], wherein said at least one clipping region comprises a rectangle and said location comprises a corner of said rectangle.

10 26. (Currently Amended) The apparatus of Claim 21 [~~23~~], wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises at least one subsampled chroma component and at least one differentiated and quantized luma components, and wherein said server is configured to determine said nearest pixel from a plurality of pixels that comprise samples from said at least one subsampled chroma component and values from said at least one differentiated and
15 quantized luma component.

27. (Currently Amended) The apparatus of Claim 21 [~~22~~], wherein said server is configured to map a plurality of clipping regions to a plurality of regions of image data.

20

28. (Original) The apparatus of Claim 27, wherein said server is configured to individually transmit said plurality of regions of image data to said receiver.

29. (Previously Presented) The apparatus of Claim 27, wherein said receiver is configured to independently scale up said plurality of regions of image data to fill respective regions of a display.

5 30. (Previously Presented) The apparatus of Claim 29, wherein said receiver is configured to apply independent scale factors to said regions of image data and wherein said scale factors reduce scaling along a horizontal axis and increase scaling along a vertical axis.

10 31.-33. (Cancelled).

34. (Currently Amended) An apparatus comprising:

means on a server for obtaining image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;

15 means on a server for mapping at least one clipping region to the image data to obtain clipped image data, wherein the mapping includes determining a nearest pixel in the image data to a location in the at least one clipping region, wherein ~~means on a server for clipping said image data to obtain clipped image data~~, the clipped image data represents ~~representing~~ a portion of the complete image when rendered in the display;

20 means for transmitting said clipped image data via a computer network from a transmitter on said server without conversion to a receiver on a thin client, wherein said computer network is a shared, low bandwidth network; and

means, at said receiver, for scaling said clipped image data for display.

35. (Previously Presented) The method of Claim 1, wherein said client is a thin client computer.

36. (Previously Presented) The method of Claim 1, wherein said computer
5 network is a shared network.

37. (Previously Presented) The method of Claim 36, wherein said shared network is a low bandwidth network.

10 38. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 11, wherein said client is a thin client computer.

39. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 11, wherein said computer network is a shared network.

15

40. (Currently Amended) The computer readable medium ~~program-product~~ of Claim 39, wherein said shared network is a low bandwidth network.

41. (Previously Presented) The apparatus of Claim 21, wherein said network is
20 a shared, low bandwidth network.

42. (Cancelled)

43. (Previously Presented) The apparatus of Claim 34, wherein said computer
25 network is a digital network.

44. (Previously Presented) The method of Claim 36, wherein said computer network is a digital network.

5 45. (Currently Amended) The computer readable medium ~~method~~ of Claim 11 ~~[[40]]~~, wherein said computer network is a digital network.

46. (Previously Presented) The apparatus of Claim 41, wherein said network is a digital network.

10

47. (Previously Presented) The apparatus of Claim 21, wherein said thin client provides a network interface to a user and wherein said server provides a plurality of computational services removed from said thin client to said user.

15 48. (Previously Presented) The apparatus of Claim 47, wherein said plurality of computational services comprise a computational power and a state maintenance for said thin client.

49. (Cancelled)

20

50. (Previously Presented) The apparatus of Claim 21, wherein said image data is clipped only at said server and said clipped image data is scaled only at said thin client in order to provide greater image data transmission efficiency from said server to said thin client via said network.

25

51. (Previously Presented) The apparatus of Claim 21, further comprising a clip- list identifying visible region displayed on the client, wherein said server is configured to obtain a copy of said clip-list and wherein said copy of said clip-list residing on said server is used by said server to obtain said clipped image data from said
5 obtained image data.